Algebra II Name: _____

Mrs. Britton

2.7 Transformations Activity Date: _____

In your group:

Parent function: $f(x) = x^2$

Graph the parent function in Y_1 on your graphing calculator.

1. Graph $g(x) = x^2 + 3$ in Y_2 and change the thickness of the line (to tell them apart easily). Describe the transformation from *f(x)* to *g(x)*. In other words how does the graph change from *f* to *g*?

2. Graph $h(x) = x^2 - 3$ in Y_2 and change the thickness of the line (to tell them apart easily). Describe the transformation from *f(x)* to *h(x)*.

3. Graph $g(x) = (x+3)^2$ in Y_2 and change the thickness of the line (to tell them apart easily). Describe the transformation from *f(x)* to *g(x)*.

4. Graph $h(x)=(x-3)^2$ in Y_2 and change the thickness of the line (to tell them apart easily). Describe the transformation from *f(x)* to *h(x)*.

As A Class: Discuss discoveries and make a rule.

In your group:

Parent Function: $f(x)=x^2$

Graph the parent function in Y_1 on your graphing calculator.

5. Graph $g(x)=-x^2$ in Y_2 and change the thickness of the line (to tell them apart easily). Describe the transformation from *f(x)* to *g(x)*.

6. Graph $h(x)=(-x)^2$ in Y_2 and change the thickness of the line (to tell them apart easily). Describe the transformation from *f(x)* to *h(x)*.

If you distribute the exponent in *h(x)* what do you get? Does this make sense based on the graph?

Parent Function: $f(x)=(x+2)^3$

Graph the parent function in Y_1 on your graphing calculator.

7. Graph $g(x)=-(x+2)^3$ in Y_2 and change the thickness of the line (to tell them apart easily). Describe the transformation from *f(x)* to *g(x)*.

8. Graph $h(x)=(-x+2)^3$ in Y_2 and change the thickness of the line (to tell them apart easily). Describe the transformation from *f(x)* to *h(x)*.

As A Class: Discuss discoveries and make a rule.